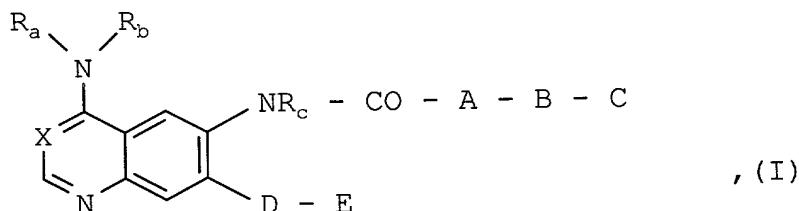


What is claimed is:

1. A compound of the formula



5 wherein

R_a denotes a hydrogen atom or a methyl group,

10 R_b denotes a phenyl, benzyl- or 1-phenylethyl group wherein the phenyl nucleus is substituted in each case by the groups R₁ to R₃, while

R₁ and R₂, which may be identical or different, in each case denote a hydrogen, fluorine, chlorine, bromine or iodine atom,

15 a methyl, ethyl, hydroxy, methoxy, ethoxy, amino, cyano, vinyl or ethynyl group,

an aryl, aryloxy, arylmethyl or arylmethoxy group,

a methyl or methoxy group substituted by 1 to 3 fluorine atoms or

20 R₁ together with R₂, if they are bound to adjacent carbon atoms, denote a -CH=CH-CH=CH, -CH=CH-NH- or -CH=N-NH group and

R₃ denotes a hydrogen, fluorine, chlorine or bromine atom,

25 R_c denotes a hydrogen atom or a methyl group,

X denotes a methyne group substituted by a cyano group or a nitrogen atom,

A denotes a 1,1- or 1,2-vinylene group which may be substituted in each case by one or two methyl groups or by a trifluoromethyl group,

5

an ethynylene group or

a 1,3-butadien-1,4-ylene group optionally substituted by a methyl or trifluoromethyl group,

10 B denotes an alkylene or -CO-alkylene group wherein the alkylene moiety in each case contains 1 to 4 carbon atoms, while the linking of the -CO-alkylene group to the adjacent group A in each case must take place via the carbonyl group,

a -CO-O-alkylene- or -CO-NR₄-alkylene group wherein the alkylene moiety in each case

15 contains 1 to 4 carbon atoms, while the linking to the adjacent group A in each case must take place via the carbonyl group, wherein

R₄ denotes a hydrogen atom or a methyl or ethyl group,

20 or a carbonyl group,

C denotes a 2-oxo-morpholin-4-yl group substituted by the group R₅ or by the group R₅ and a C₁₋₄-alkyl group, while

25 R₅ denotes a C₃₋₄-alkyl, hydroxy-C₁₋₄-alkyl, C₁₋₄-alkoxy-C₁₋₄-alkyl, di-(C₁₋₄-alkyl)-amino-C₁₋₄-alkyl, pyrrolidino-C₁₋₄-alkyl, piperidino-C₁₋₄-alkyl, morpholino-C₁₋₄-alkyl, 4-(C₁₋₄-alkyl)-piperazino-C₁₋₄-alkyl, C₁₋₄-alkylsulphonyl-C₁₋₄-alkyl, C₁₋₄-alkylsulphinyll-C₁₋₄-alkyl, C₁₋₄-alkylsulphonyl-C₁₋₄-alkyl, cyano-C₁₋₄-alkyl, C₁₋₄-alkoxycarbonyl-C₁₋₄-alkyl, aminocarbonyl-C₁₋₄-alkyl, C₁₋₄-alkyl-aminocarbonyl-C₁₋₄-alkyl, di-(C₁₋₄-alkyl)aminocarbonyl-C₁₋₄-alkyl, pyrrolidinocarbonyl-C₁₋₄-alkyl, piperidinocarbonyl-

C₁₋₄-alkyl, morpholinocarbonyl-C₁₋₄-alkyl or a 4-(C₁₋₄-alkyl)-piperazinocarbonyl-C₁₋₄-alkyl group,

a 2-oxo-morpholin-4-yl group substituted by two groups R₅, where R₅ is as hereinbefore

5 defined and the two groups R₅ may be identical or different,

a 2-oxo-morpholin-4-yl group, wherein the two hydrogen atoms of a methylene group are replaced by a -(CH₂)_m, -CH₂-Y-CH₂, -CH₂-Y-CH₂-CH₂, -CH₂CH₂-Y-CH₂CH₂- or -CH₂CH₂-Y-CH₂CH₂CH₂- bridge optionally substituted by one or two C₁₋₂-alkyl groups,

10 while

m denotes the number 2, 3, 4, 5 or 6 and

Y denotes an oxygen or sulphur atom, a sulphonyl, sulphonyl or C₁₋₄-alkylimino group,

15 a 2-oxo-morpholin-4-yl group, wherein a hydrogen atom in the 5 position together with a hydrogen atom in the 6 position is replaced by a -(CH₂)_n, -CH₂-Y-CH₂, -CH₂-Y-CH₂CH₂- or -CH₂CH₂-Y-CH₂-bridge, while

Y is as hereinbefore defined and

20 n denotes the number 2, 3 or 4,

or, if D together with E denotes a group R_d, it may also denote a 2-oxo-morpholin-4-yl group which may be substituted by 1 to 4 C₁₋₂-alkyl groups,

25 D denotes a -O-C₁₋₆-alkylene group, while the alkylene moiety is linked to the group E, or

an oxygen atom, while this may not be linked to a nitrogen atom of the group E, and

30 E denotes an amino group substituted by 2 C₁₋₄-alkyl groups, wherein the alkyl groups may be identical or different and each alkyl moiety may be substituted from the 2 position by a C₁₋₄-alkoxy or di-(C₁₋₄-alkyl)-amino group or by a 4- to 7-membered alkyleneimino group,

while in the abovementioned 6- to 7-membered alkyleneimino groups in each case a methylene group may be replaced in the 4 position by an oxygen or sulphur atom or by a sulphinyl, sulphonyl- or N-(C₁₋₄-alkyl)-imino group,

5 a 4- to 7-membered alkyleneimino group optionally substituted by 1 to 4 methyl groups,

a 6- to 7-membered alkyleneimino group optionally substituted by 1 or 2 methyl groups, wherein in each case a methylene group in the 4 position is replaced by an oxygen or sulphur atom or by a sulphinyl, sulphonyl- or N-(C₁₋₄-alkyl)-imino group,

10

an imidazolyl group optionally substituted by 1 to 3 methyl groups,

a C₅₋₇-cycloalkyl group, wherein a methylene group is replaced by an oxygen or sulphur atom or by a sulphinyl, sulphonyl or N-(C₁₋₄-alkyl)-imino group, or

15

D together with E denotes a hydrogen atom,

a C₁₋₆-alkoxy group optionally substituted from the 2 position by a hydroxy- or C₁₋₄-alkoxy group,

20

a C₃₋₇-cycloalkoxy- or C₃₋₇-cycloalkyl-C₁₋₄-alkoxy group,

or a group R_d, where

25 R_d denotes a C₂₋₆-alkoxy group which is substituted from the 2 position by a C₄₋₇-cycloalkoxy- or C₃₋₇-cycloalkyl-C₁₋₃-alkoxy group,

a C₄₋₇-cycloalkoxy- or C₃₋₇-cycloalkyl-C₁₋₆-alkoxy group wherein the cycloalkyl moiety in each case is substituted by a C₁₋₄-alkyl, C₁₋₄-alkoxy, di-(C₁₋₄-alkyl)-amino, pyrrolidino,

30 piperidino, morpholino, piperazino, 4-(C₁₋₂-alkyl)-piperazino, C₁₋₄-alkoxy-C₁₋₂-alkyl, di-(C₁₋₄-alkyl)-amino-C₁₋₂-alkyl, pyrrolidino-C₁₋₂-alkyl, piperidino-C₁₋₂-alkyl, morpholino-

C_{1-2} -alkyl, piperazino- C_{1-2} -alkyl- or 4-(C_{1-2} -alkyl)-piperazino- C_{1-2} -alkyl group, while the abovementioned cycloalkyl moieties may additionally be substituted by a methyl or ethyl group,

5 while, unless otherwise stated, by the aryl moieties mentioned in the definition of the abovementioned groups is meant a phenyl group which may be mono- or disubstituted by R_6 , while the substituents may be identical or different and

10 R_6 denotes a fluorine, chlorine, bromine or iodine atom, a C_{1-2} -alkyl, trifluoromethyl or C_{1-2} -alkoxy group, or

two groups R_6 , if they are bound to adjacent carbon atoms, together represent a C_{3-4} -alkylene, methylenedioxy or 1,3-butadien-1,4-ylene group,

15 or a tautomer or salt thereof.

2. A compound of the formula I according to claim 1, wherein

R_a denotes a hydrogen atom,

20 R_b denotes a benzyl or 1-phenylethyl group or a phenyl group substituted by the groups R_1 and R_2 , while

25 R_1 denotes a hydrogen, fluorine, chlorine or bromine atom, a methyl, trifluoromethyl, cyano or ethynyl group and
 R_2 denotes a hydrogen or fluorine atom,

R_c denotes a hydrogen atom,

30 X denotes a nitrogen atom,

A denotes a 1,2-vinylene group,

B denotes a C₁₋₄-alkylene group,

5 C denotes a 2-oxo-morpholin-4-yl group substituted by the group R₅ or by the group R₅ and a C₁₋₄-alkyl group, while

R₅ denotes a C₃₋₄-alkyl, C₁₋₂-alkoxy-C₁₋₄-alkyl, di-(C₁₋₂-alkyl)-amino-C₁₋₄-alkyl, pyrrolidino-C₁₋₄-alkyl, piperidino-C₁₋₄-alkyl, morpholino-C₁₋₄-alkyl, 4-(C₁₋₂-alkyl)-

10 piperazino-C₁₋₄-alkyl, C₁₋₂-alkylsulphanyl-C₁₋₄-alkyl, C₁₋₂-alkylsulphinyl-C₁₋₄-alkyl, C₁₋₂-alkylsulphonyl-C₁₋₄-alkyl, cyano-C₁₋₄-alkyl, C₁₋₂-alkoxycarbonyl-C₁₋₄-alkyl, aminocarbonyl-C₁₋₄-alkyl, C₁₋₂-alkyl-aminocarbonyl-C₁₋₄-alkyl, di-(C₁₋₂-alkyl)-aminocarbonyl-C₁₋₄-alkyl, pyrrolidinocarbonyl-C₁₋₄-alkyl, piperidinocarbonyl-C₁₋₄-alkyl, morpholinocarbonyl-C₁₋₄-alkyl- or a 4-(C₁₋₂-alkyl)-piperazinocarbonyl-C₁₋₄-alkyl group,

15 a 2-oxo-morpholin-4-yl group substituted by two groups R₅, while R₅ is as hereinbefore defined and the two groups R₅ may be identical or different,

20 a 2-oxo-morpholin-4-yl group, wherein the two hydrogen atoms of a methylene group are replaced by a -(CH₂)_m, -CH₂-Y-CH₂, -CH₂-Y-CH₂-CH₂- or -CH₂CH₂-Y-CH₂CH₂-bridge, while

m denotes the number 2, 3, 4 or 5 and

Y denotes an oxygen or sulphur atom, a sulphinyl, sulphonyl or C₁₋₂-alkylimino group,

25 a 2-oxo-morpholin-4-yl group, wherein a hydrogen atom in the 5 position together with a hydrogen atom in the 6 position is replaced by a -(CH₂)_n, -CH₂-Y-CH₂, -CH₂-Y-CH₂CH₂- or -CH₂CH₂-Y-CH₂-bridge, where

30 Y is as hereinbefore defined and

n denotes the number 2, 3 or 4,

or, if D together with E denotes a group R_d , it may also denote a 2-oxo-morpholin-4-yl group which may be substituted by 1 or 2 methyl or ethyl groups,

5 D denotes a $-O-C_{1-4}$ -alkylene group, while the alkylene moiety is linked to the group E, and

E denotes a dimethylamino, diethylamino, pyrrolidino, piperidino, morpholino, 4-methyl-piperazino- or 4-ethyl-piperazino group or

10

D together with E denotes a hydrogen atom,

a methoxy, ethoxy, 2-methoxy-ethoxy, 3-methoxy-propyloxy, tetrahydrofuran-3-yloxy, tetrahydropyran-3-yloxy, tetrahydropyran-4-yloxy, tetrahydrofuranylmethoxy or

15

tetrahydropyranylmethoxy group,

a cyclobutyloxy, cyclopentyloxy, cyclohexyloxy, cyclopropylmethoxy, cyclobutylmethoxy, cyclopentylmethoxy or cyclohexylmethoxy group or

20

a group R_d , where

R_d denotes a 2-(cyclobutyloxy)-ethoxy, 2-(cyclopentyloxy)-ethoxy, 2-(cyclopropylmethoxy)-ethoxy or 2-(cyclobutylmethoxy)-ethoxy group,

25

or a tautomer or salt thereof.

3. A compound of the formula I according to claim 1, wherein

R_a denotes a hydrogen atom,

30

R_b denotes a 1-phenylethyl, 3-methylphenyl, 3-chlorophenyl, 3-bromophenyl- or 3-chloro-4-fluorophenyl group,

R_c denotes a hydrogen atom,

5

X denotes a nitrogen atom,

A denotes a 1,2-vinylene group,

10 B denotes a methylene group,

C denotes a 2-oxo-morpholin-4-yl group which is substituted by a methoxymethyl, methoxyethyl, ethoxymethyl, ethoxyethyl, dimethylaminomethyl, dimethylaminoethyl, diethylaminomethyl, diethylaminoethyl, cyanomethyl or cyanoethyl group,

15

a 2-oxo-morpholin-4-yl group, wherein the two hydrogen atoms of a methylene group are replaced by a -CH₂CH₂, -CH₂CH₂CH₂, -CH₂CH₂CH₂CH₂, -CH₂CH₂CH₂CH₂CH₂, -CH₂-O-CH₂CH₂, -CH₂-NCH₃-CH₂CH₂, -CH₂-NC₂H₅-CH₂CH₂, -CH₂CH₂-O-CH₂CH₂, -CH₂CH₂-NCH₃-CH₂CH₂- or -CH₂CH₂-NC₂H₅-CH₂CH₂- bridge,

20

a 2-oxo-morpholin-4-yl group, wherein a hydrogen atom in the 5 position together with a hydrogen atom in the 6 position is replaced by a -CH₂CH₂CH₂, -CH₂CH₂CH₂CH₂, -CH₂-O-CH₂, -CH₂-NCH₃-CH₂, -CH₂-NC₂H₅-CH₂, -CH₂-O-CH₂CH₂, -CH₂-NCH₃-CH₂CH₂, -CH₂-NC₂H₅-CH₂CH₂, -CH₂CH₂-O-CH₂, -CH₂CH₂-NCH₃-CH₂- or -CH₂CH₂-NC₂H₅-CH₂- bridge,

25

or, if D together with E denotes a group R_d, it may also denote a 2-oxo-morpholin-4-yl group which is substituted by 1 or 2 methyl groups, and

30 D together with E denotes a hydrogen atom,

a methoxy, ethoxy, 2-methoxy-ethoxy, 3-methoxy-propoxy, tetrahydrofuran-3-yloxy, tetrahydropyran-4-yloxy or tetrahydrofurylmethoxy group,

a cyclobutyloxy, cyclopentyloxy, cyclopropylmethoxy, cyclobutylmethoxy or

5 cyclopentylmethoxy group or

a group R_d , where

R_d denotes a 2-(cyclobutyloxy)-ethoxy, 2-(cyclopentyloxy)-ethoxy,

10 2-(cyclopropylmethoxy)-ethoxy or 2-(cyclobutylmethoxy)-ethoxy group,

or a tautomer or salt thereof.

4. A compound of the formula I according to claim 1, wherein

15 R_a denotes a hydrogen atom,

R_b denotes a 3-chloro-4-fluorophenyl group,

20 R_c denotes a hydrogen atom,

X denotes a nitrogen atom,

A denotes a 1,2-vinylene group,

25 B denotes a methylene group,

C denotes a 2-oxo-morpholin-4-yl group which is substituted by a methoxymethyl or methoxyethyl group, or

30

a 2-oxo-morpholin-4-yl group, wherein the two hydrogen atoms of a methylene group are replaced by a -CH₂CH₂-O-CH₂CH₂- bridge, and

D together with E denotes a hydrogen atom, a methoxy or cyclopropylmethoxy group,

5

or a tautomer or salt thereof.

5. A compound selected from the group consisting of:

10 (1) 4-[(3-chloro-4-fluoro-phenyl)amino]-6-{{4-((R)-2-methoxymethyl-6-oxo-morpholin-4-yl)-1-oxo-2-buten-1-yl]amino}-7-cyclopropylmethoxy-quinazoline,

(2) 4-[(3-chloro-4-fluoro-phenyl)amino]-6-{{4-(2-oxo-1,9-dioxa-4-aza-spiro[5.5]undec-4-yl)-1-oxo-2-buten-1-yl]amino}-7-cyclopropylmethoxy-quinazoline and

15 (3) 4-[(3-chloro-4-fluoro-phenyl)amino]-6-({4-[2-(2-methoxy-ethyl)-6-oxo-morpholin-4-yl]-1-oxo-2-buten-1-yl}amino)-7-cyclopropylmethoxy-quinazoline,

or a tautomer or salt thereof.

20

6. A physiologically acceptable salt of a compound according to claim 1, 2, 3, 4 or 5, formed with an inorganic or organic acid or base.

7. A pharmaceutical composition comprising a compound according to claim 1, 2, 3, 4 or 5 or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable carrier or diluent.

8. A method of treating a benign or malignant tumour, a disease of the respiratory tract or lungs, polyps, a disease of the gastro-intestinal tract, bile duct or gall bladder, a disease of the kidneys or of the skin, which comprises administering a therapeutically effective

amount of a compound according claim 1, 2, 3, 4 or 5 or a pharmaceutically acceptable salt thereof.